PA966 / PA967
Portable Terminal
User's Manual

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PA966/967 User's Manual

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NOTICE

This unit is equipped with a battery pack and backup battery. It is possible that the Unitech PA966/967 may not immediately power-on due to battery discharge as a result of storage.

In the above situation, plug the PA966/967 to the RS232 or USB cable, or place the unit into the Unitech PA966/967 Cradle (with 12V/2A AC-DC adapter, part number 1010-601478), and recharge the unit for 16 hours in order to fully charge its backup battery.

The backup battery will charge from external power or the main battery if the main battery still has enough power to turn on. In the event the main battery is fully charged, refrain from using the PA966/967 for 16 hours in order for the main battery to fully charge the backup battery.

Backing-up data via backup battery only (without the main battery installed) may take as long as 4 hours. Therefore, in order to prevent data loss due to backup battery failure, do not leave the PA966/967 without the rechargeable battery pack installed or without connection to AC power for an extended period of time.

Chapter 1. Introduction

Thank you for purchasing the Unitech PA966/967 (subsequently referred to as the PA966, unless the PA967 is specifically referenced).

Your PA966 is a rugged, compact, and lightweight palm-size mobile computer. It utilizes the Windows CE 4.2 .NET operating system, and incorporates either an internal laser bar code scanning device (for 1D scanning) or an imaging module (for 2D scanning or imaging) as well as a color LCD touch screen, a 36 key alphanumeric keypad, and CF and PCMCIA expansion slots to support Bluetooth, WiFi, GPRS, and additional functionality.

This product reference guide will assist in the setup and use of your PA966.

PA966 PA967

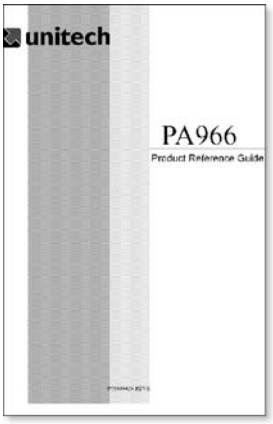
Unitech PA966 & Accessories

After opening the PA966 box, please make sure the following items are present:

PA966 Main Unit

User Guide CD

Battery Pack



Quick Reference Guide

Stylus

Tour of the Unitech PA966

First Steps with the Unitech PA966

There are three ways to provide power to the PA966:

- Rechargeable Lithium-Ion battery pack
- RS232/Charging cable or USB/Charging cable
- Docking Station

Note: *Data you enter may not be properly stored until the built-in backup battery has been adequately charged. Please remember to turn on the back-up battery before you charge the terminal.*

Installing the Battery Pack

1. Remove the battery compartment door using the flip-out battery compartment latches located on the bottom of the PA966.

2. Position the battery pack with the recessed contacts towards the bottom right side of the battery (to line up with the battery contacts in the battery compartment). Insert and fully seat the battery pack, making sure the shape of the battery compartment fits the shape of the battery compartment.

3. Re-attach the battery compartment door with the battery compartment latches.

Supplying Power to the PA966

Connect the RS232/Charging Cable or USB/Charging Cable between the PA966 and your PC, and then connect the AC adapter between the cable's power jack and an electrical outlet.

Or place the PA966 into the Docking Station, after connecting the power supply between an electrical outlet and the Docking Station.

Charging the Main and Backup Batteries for the First Time

It may take up to 16 hours to fully charge the empty backup battery. The first time charge should be for at least 16 hours to insure a proper charge.

CAUTION: Operating the PA966 for the first time without the AC adapter, and without fully charging the backup battery may result in loss of data stored in RAM memory.

Using the Stylus

CAUTION: Never use anything other than the PA966's stylus on the screen. Using another object as a stylus could cause permanent damage.

1. Hold the stylus as you would a pencil.
2. To make a choice from a menu, lightly tap the tip of the stylus on that choice.
3. To write data into a field on a form, use the stylus to print the letters or numbers. Use very light pressure.

Protective Screen Film

The PA966 screen ships with a protective plastic film. You may remove this if desired by peeling from one corner. The screen will be more susceptible to scratching without the film, but will be more readable, and the touchscreen will work better.

First Operation of the Unitech PA966

Press the ON/OFF Key

The Unitech PA966 welcome screen appears. The Windows CE® screen will appear shortly thereafter.

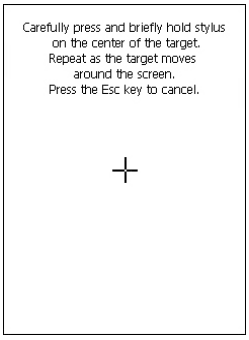
Adjust Screen Brightness

Press [FUNC] key and *Cursor* key to increase or increase screen brightness.

Calibrate the PA966

This screen will automatically appear when the unit is powered-on for the first time or after the system is reset. This screen can also be accessed at any time by pressing the hot key [FUNC] and the [ESC] key.

The PA966 will prompt you to calibrate the unit by tapping a sequence of screen locations. Tap gently but firmly. When you have completed the series of taps, press the [ENT] key to confirm it or press the [ESC] key to cancel it.



Setting Time Zone, Date, and Time

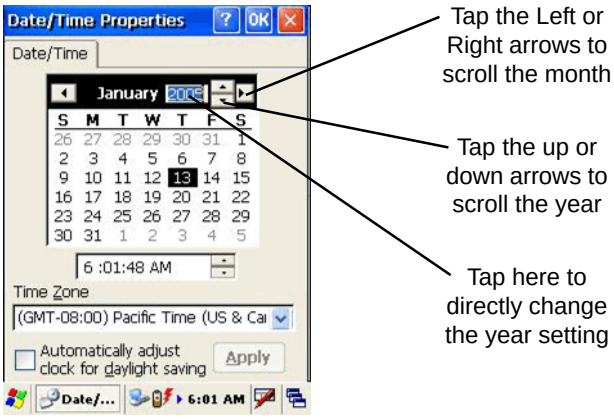
After Calibrating the PA966, the “Date/Time Properties” dialog box will appear. Follow the steps below to set the date and time.

Setting the Time Zone first

Follow the steps below to set up your time zone.

1. Tap the location arrow to see a list of cities.
2. Choose your location (or nearest listed one).
3. Select the *Daylight Savings Time* check box, if necessary.
4. Tap the *Apply* button.

Setting the Year and Month



Exiting Date/Time Properties Settings

Tap OK or the X (cancel) button at upper-right corner to exit.

Flash Memory

Flash Memory is a re-writable location in which to store up to 64 MB of programs and data files. The benefit of this feature is that files and programs saved in Flash Memory are unaffected by the PA966's power status.

To access the contents of Flash Memory, simply select *My Computer* on the desktop and then select *Flash Storage*. The programs and data files currently stored in Flash Memory will be displayed.

To save to Flash Storage, select *File*, *Save To*, and select *Flash Storage* just like you would select any other storage medium.

Chapter 2. Using the Keypad and Scanner

Keypad

The PA966 keypad contains 36 keys, including:

- Esape key
- Cursor key
- Enter key
- Backspace key
- ON/OFF key
- Tab key
- Function key
- 0~9 numerals
- Alpha keys
- Decimal Point key

Please refer to the picture to the right.

ON/OFF	When the unit is off, pressing the ON/OFF key will turn the unit on. Alternatively, when the unit is on, this key must be pressed and held down for about two seconds in order to turn the unit off.
[ESC]	The Escape key will perform the same function as tapping the CANCEL button or the **X** icon on the touch screen.
[Back space]	The Backspace key is used to erase previously input characters.
[FUNC]	The Function key is used to perform alternative key functions.
[TAB]	The Tab key is used to toggle between data fields or to place the cursor at pre-determined places in a programming or word processing application.
[ENT]	The Enter key is used to initiate a process or confirm a selection made by the user.
[Cursor]	The Cursor key is used to navigate among applications.
[Alpha]	The Alpha key is used to toggle between Numberic and Alpha Mode. Use the Func key to toggle caps in Alpha Mode.

Keypad Layout

When the PA966 boots, the default condition is Alpha Mode off.
When the Apha Mode is toggled on, use the Func key to toggle caps on and off.

Key Position	Alpha Off (default)		Alpha On	
	Func Up	Func Down	Func Up	Func Down
Esc	Escape	Escape	Escape	Escape
BkSp	Backspace	Backspace	Backspace	Backspace
Enter	Enter	Enter	Enter	Enter
1 a	1	F1	a	A
2 b	2	F2	b	B
3 c	3	F3	c	C
⇥ d	Tab	`	d	D
4 e	4	F4	e	E
5 f	5	F5	f	F
6 g	6	F6	g	G
+ h	+	^	h	H
% i	%	Backlight	i	I
7 j	7	F7	j	J
8 k	8	F8	k	K
9 l	9	F9	l	L
- m	-	_	m	M
. n	.	;	n	N
@ o	@	!	o	O
0 p	0	$	p	P
(q	(	)	q	Q
* r	*	#	r	R
⎵ s	Space	Space	s	S
" t	“	‘	t	T
, u	,	?	u	U
[v	[	]	v	V
/ w	/	\	w	W
< x	<	>	x	X
= y	=	&	y	Y
Del z	Delete	~	z	Z

Useful Hotkeys

The PA966 provides eight combination hot keys to activate specified screen setting functions or programs. These hotkeys are useful for toggling the backlight and adjusting screen contrast when the menu-driven operation is disabled. Below is the list of hotkeys. To use them, press and hold the [FUNC] key in combination with the corresponding second key.

Func + 7	Scanner setting
Func + 8	Power status
Func + 9	System information
Func + ▲	LCD backlight on/off
Func + ▼	Keypad backlight on/off
Func + ◀	Display brightness - decrease
Func + ▶	Display brightness - increase

Software Keyboard (Windows CE Keyboard)

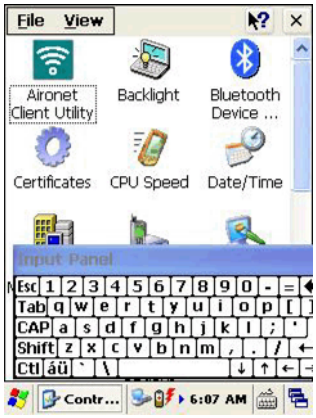
In addition to the 966's alphanumeric keypad, Windows CE provides a touch screen keypad in QWERTY format.

Opening the Windows CE Keyboard:

The Windows CE keyboard can be opened by tapping the keyboard icon on the task bar. (Refer to picture at right).

Keying-in Characters:

After tapping the "keyboard" icon, the Windows CE keyboard pops up. Character input is the same as on a standard PC. Simply tap the on-screen button corresponding to the character you want to input.



International Character Support:

Tap the [áü] button to switch from the standard English keyboard to the European keyboard.

Moving the Keyboard:

Use the stylus to point to the title bar (the bar displaying "Input Panel") and then move the stylus without lifting it from the screen.

Closing the Keyboard:

Tap the keyboard icon to close the Windows CE keyboard.

Using the Built-in Scanner

The PA966 has an integrated 1D or 2D scanner which will read all major barcodes. Trigger keys are located on the left and right sides of the screen. When the scanner is active press either of these to scan for barcode data or capture an image (2D scanner only).

You must run software that can access the scanner in order to operate and/or test it. This can be the Scanner Settings tool (My Computer > Control Panel > Scanner Settings), Scan2Key.exe (My Computer > Windows > Scan2Key.exe; by default a hidden file), or a custom application.

Scan2Key

While Scan2Key is running data from barcodes will input as a keypad entry. To test, open the WordPad text editor and note the cursor location. As you aim and trigger the scanner you will hear a scan confirmation beep and see the data appear in WordPad.

Modifying the Scanner Settings

Sometimes the PA966's default scanner settings are inappropriate for a particular situation. In this case, the next several pages will guide you in customizing you PA966's scanner output.

In Control Panel, click Scanner Settings to run the settings utility. The screen to the right appears with the following tabs:

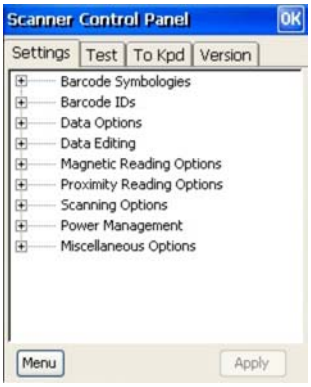
- Settings
- Test
- To Kpd
- Version

Each of these topics are discussed in detail below, beginning with *Settings*.

The screen to the right appears displaying the following tabs:

- Settings
- Test
- To Kpd
- Version

Each of these topics are discussed in detail on the following pages, beginning with *Settings*, below.

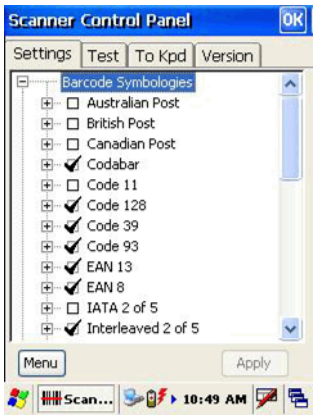


Settings

Bar Code Symbologies

Tap the ⊞ next to Barcode Symbologies to reveal a list of all supported 1D barcode symbologies. A check in the box next the symbology indicates it is currently enabled (i.e. can be scanned.) Tap the box to check or uncheck (enable or disable) the symbology. You can access additional settings specific to the symbology (such as whether to send check digit, maximum and minimum length, ISBN output, etc.) by clicking the plus sign next to the symbology.

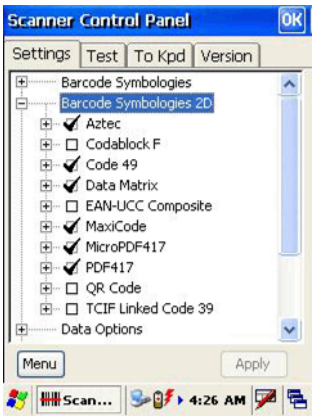
Tap the box to check or uncheck (enable or disable) the symbology.



Access additional settings specific to the symbology (such as whether to send check digit, maximum and minimum length, ISBN output, etc.) by clicking the plus sign next to the symbology.

2D Symbologies

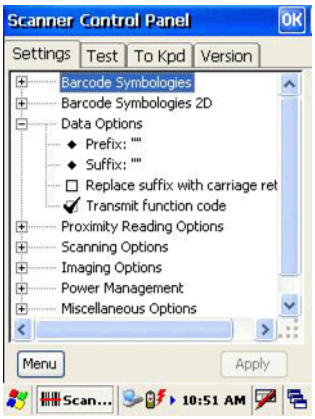
Symbology settings for 2D barcodes work the same as those for 1D. Take note that some symbologies such as EAN have 1D and 2D counterparts and settings for one will not effect the other.



Data Options

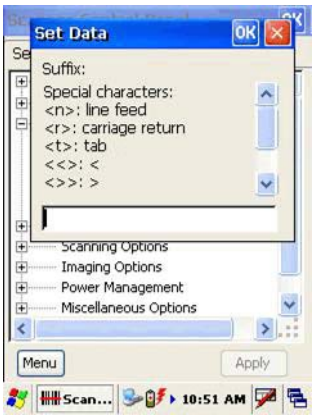
Data Options deals with the output from the scanner that applies to the data of all scans - regardless of symbology - or even magnetic stripe data. Data option settings are as follows:

- Prefix
- Suffix
- Replace suffix with carriage return
- Transmit function code



Prefix
Double click on Prefix to setup a special string that will be output before every scan. This can be any alphanumeric string or a special character (see *Suffix* below). For alphanumeric strings simply type the characters into the text field. Special characters like Tab use brackets surrounding a letter to indicate what the prefix should be. For example a Tab would be <t> (see picture for chart of special characters that appears on screen while entering prefix).

Suffix
Suffix is set up exactly like prefix, but follows immediately after the scanned data. Please note that suffix comes before *Terminator,* which is the very last character output (see Scanning Options below to set Terminator).



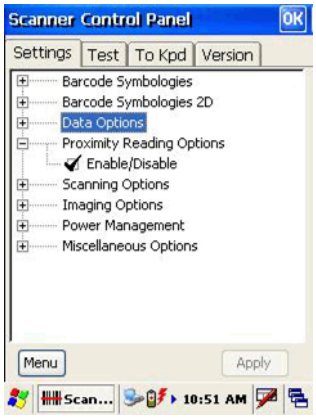
Key in the special character stated in the *Set Data* window.
For instance, enter “<r>” (no quotes) to include a carriage return, or “<t>” (no quotes) to include a tab before and/or after the bar code data. Enter text or numbers directly if you want the bar code preceded and/or followed by specific numbers or text.
Tap *OK* when finished.

Replace Suffix with Carriage Return
Check this box to quickly overwrite the terminator with a carriage return

Transmit Function Code
Some barcodes contain Function Codes which will cause the reader output a command like tab or new line, rather than just data. Check this box to enable these codes.

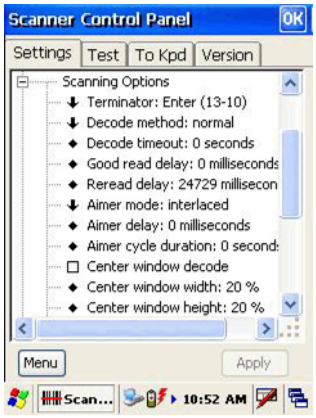
Proximity Reading Options

If you have installed a proximity reader module into your PA966 you can use this option to enable and disable the reader.



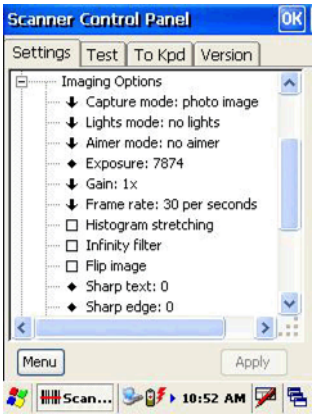
Scanning Options

Scanning options cover settings for the functionality of the reader such as timing and accuracy. For most applications the default settings will be appropriate, if you want to know more about these settings please call our offices for an explanation



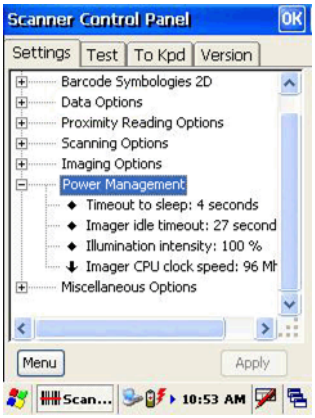
Imaging Options

Imaging options cover settings for the image capture features of the 2D scanner. Again default settings are appropriate for most applications and should you wish to know more call our offices.



Power Management Options

Power management options affect battery life and scanner performance, the default settings are usually appropriate but if you require greater battery life from your device this is one way to achieve it.



Timeout To Sleep

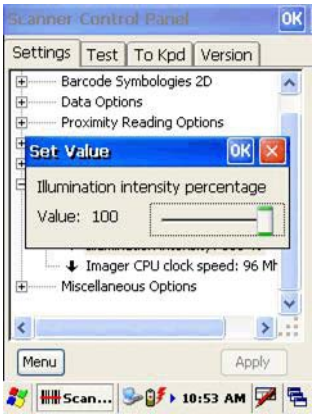
You can set this option to have the reader go into “sleep mode” which uses less power after not being used for some time. There will be a slight delay before the next scan as the reader “wakes up.”

Imager Idle Timeout

This setting controls how long after a scan the reader will go into “idle” mode which is in between active and sleep in terms of power usage. Return from idle mode is nearly instant.

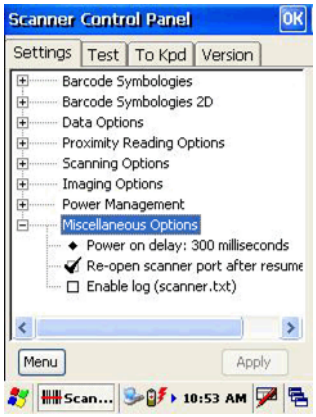
Illumination Intensity

This setting controls how bright the light used to scan barcodes will be. Lowering this value will decrease scanner performance (distance and time) but increase battery life.



Miscellaneous Options

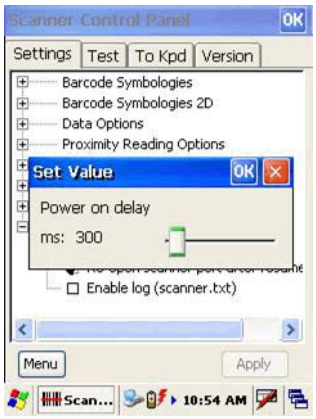
Three selections are displayed after clicking *Miscellaneous Options*:



- Power on delay
- Re-open scanner after resume power
- Enable log

Power On Delay

This setting controls how long the reader will wait after a device power on to become active. This can be useful for timing startup with a customer application but typically the default setting is appropriate.



Re-Open Scanner Port After Resume Power

This setting controls whether an application that is accessing the scanner will have instant access again after a power down. If unchecked the scanner will have to be re-opened by the application but will be available to other programs in that time.

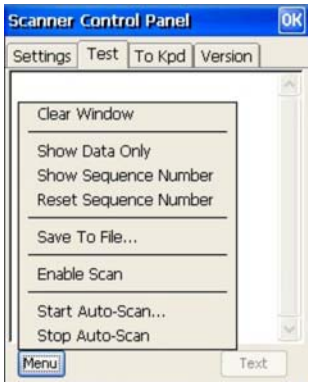
Enable Log (scanner.txt)

Checking this option will cause a file to be written which records the commands and actions of the reader. This is useful in debugging an application that uses the scanner but not typically needed in normal operation. See the programmers manual for more information.

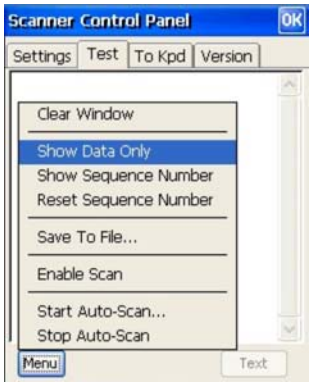
Test

1D Scanning

The PA966 can be equipped with either a 1D laser bar code scanner or a 2D imager. Following are the procedures for 1D scanning. For 2D scanning, refer to page 22.
Select the *Test* tab near the top of the screen. Tap *Menu* at the bottom of the screen and a list of options will appear.



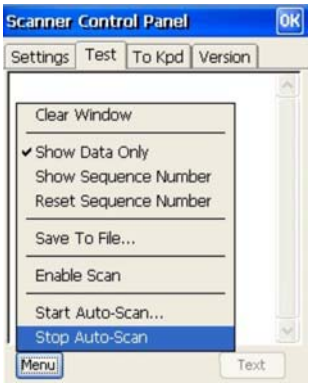
Show Data Only
Select his function if you simply want the scanned data to appear on the screen, one scan after another.
Select *Show Data Only*.



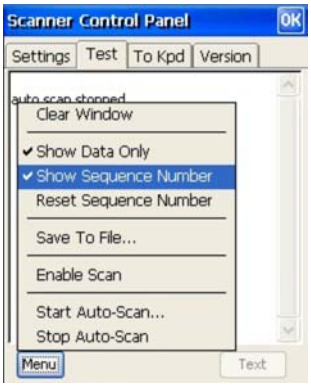
Auto-Scan
In the same menu select *Start Auto-Scan*.
In the pop-up menu (shown to the right) select the time interval you want between scans. Example shown is 3 seconds. Click *Start*.

Now the laser will scan every three seconds. Aim the laser at the target bar codes and each read bar code will appear on your PA966's screen (*Data Only* mode shown to the right).

To stop auto-scan, tap *Menu* at the bottom of the screen and select "Stop Auto-Scan". Scanning will be halted.

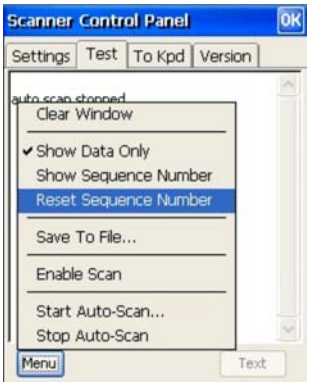


Show Sequence Number
Should you want your scanned input displayed with a number showing the sequence of each scan, select *Show Sequence Number*.



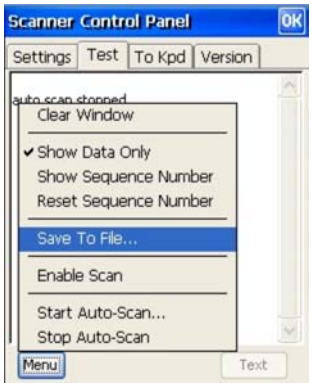
Each scan is displayed with its sequence number.

Reset Sequence Number
Tap *Menu*.
Select *Reset Sequence Number*.



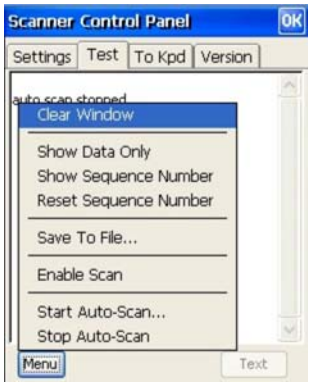
The next scanned bar code will start a new sequence beginning with "1".

Save To File
Tap *Menu*.
Select *Save To File*.

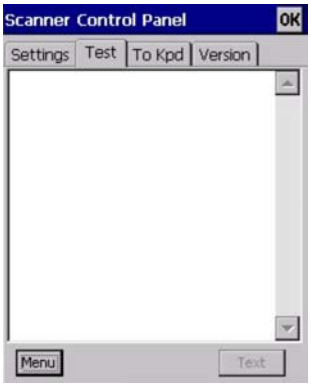


Select the directory into which you want to save the scanned data.
Key in a file name. By default the data will be saved as a text (.txt) file

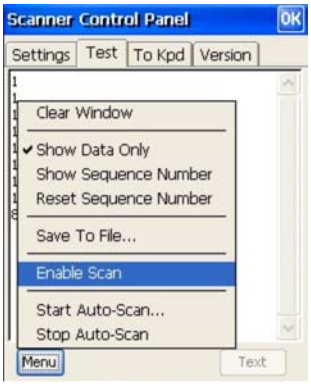
Clear Window
Tap *Menu*.
Select *Clear Window*.



The contents of the screen will be cleared.

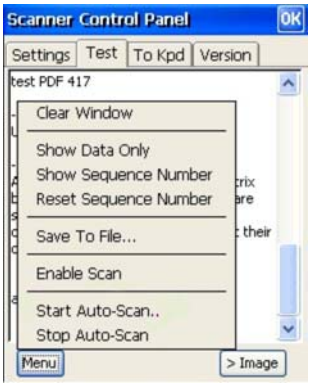


Enable Scan
Tap *Menu.*
Select *Enable Scan*.
Press the scanner trigger key.
A laser light will exit from the top of the PA966, and if it encounters a bar code it should be read (assuming it is a bar code symbology the PA966 is programmed to recognize).



2D Scanning

The procedures for 2D scanning are similar to those for 1D scanning, except that the PA966's optional 2D imager can also capture images. Select the *Test* tab. Tap *Menu*.



Auto-Scan
Select *Start Auto-Scan* (see previous image). Define the interval between scans. Aim the scanner at the target bar codes, one after the other.

To stop scanning, select *Stop Auto-Scan*.

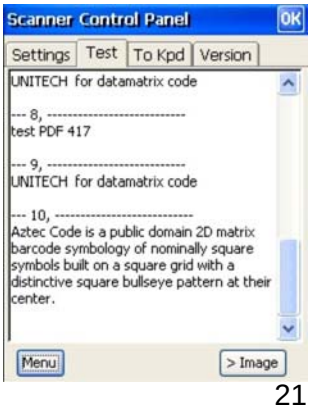
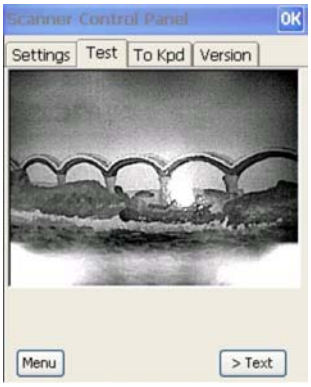
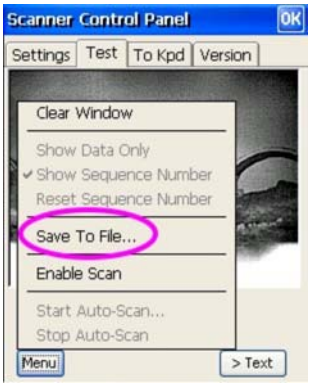


Image Scanning
Tap the *Image* button at the bottom of the screen (see previous image) to put the scanner into image mode. Press the scanner trigger key to capture an image. The image will be displayed on the screen.

Please note that the *Image* button at the bottom of the screen has changed to a *Text* button. Under the *Test* tab, this button toggles the scanner between image and text modes.



Save Image
Tap *Menu* and select *Save To File*. Give the image a name and save it as a JPG file (*name*.jpg).



Tap *Text* to return the scanner back to text mode. Now your PA966 will decode bar codes again.

Scan2Key
Tap the *To Kpd* tab to access the *Scan2Key* option. Scan2Key is a program that allows the PA966 to treat scanned input the same as keypad input.

Click the box to the left of *Start Scan2Key When Exit*.
Tap *OK*.
The Scan2Key icon will appear on the Task Bar.

Define the Intercharacter Delay and the Shift Key Delay (both in milliseconds). Scanned bar codes will read and output to these specifications.

Version

Version

Tap the *Version* tab to view general information about the PA966's decoder.

Chapter 3. Power System

Charging the Lithium-Ion Battery Pack

The optional Docking Station is a convenient accessory for daily use of the PA966. Charging the battery pack using the Docking Station takes approximately 3 hours.

Or, when using the included Charging/USB cable or Charging/ RS232 cable, the charging time of the battery pack is also about 3 hours.

Charging the Main and Backup Battery for the First Time

Note: Before using the PA966 for the first time, charge the unit for 16 hours to fully charge the empty backup battery. Operating the PA966 for the first time without the AC adapter, and without fully charging the backup battery may result in loss of data stored in RAM memory.

Note: Backing-up data by backup battery only, without the main battery installed in the battery compartment, may take as long as 4 hours. Therefore, in order to prevent data protection failure due to backup battery failure, do not leave the PA966 without the rechargeable battery pack installed, or without connection to AC power for an extended period of time.

It may take up to 96 hours to backup data when the PA966 is automatically shut down because of very low battery power while the depleted batteries are still installed in the battery compartment.

Power Status Indication

Four different icons are displayed on the status bar to indicate the on-board power status.

"Plug" icon: When displayed, this icon indicates that the battery is charging. The PA966 is either plugged-in via the DC 12V/2A power adapter or in the docking station.

Plug with power adapter

"Battery Low" icon: When displayed indicates the battery is low and needs to be charged. In other words, there is no external power supply, the battery charge is low or very low, and charging the PA966 is recommended.

Battery Low

"Battery Very Low" icon: When displayed indicates the battery is very low. Stopping the operation and charging the PA966 immediately is highly recommended.

Battery Very Low

No icon: When displayed means there is no external power supply to the PA966 but its battery power status is good.

"Backup Battery Low" icon: When displayed indicates the backup battery is low and needs to be charged.

Backup Battery Low

"Backup Battery Very Low" icon: When displayed indicates the backup battery is very low. Stopping the operation and charging the PA966 immediately is highly recommended.

Backup Battery Very Low
or Backup Battery is not turned on.

Checking Main and Backup Battery Status

Enter Power Properties:

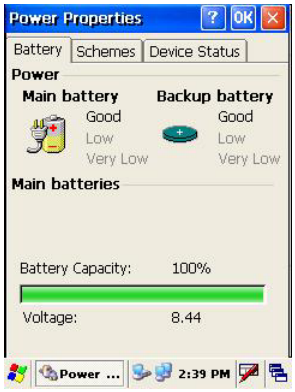
If the above mentioned Plug icon or Battery icon is displayed, double tap this icon to display the *Power Properties* screen.

Or, select *Settings/Control Panel* from the Start menu and then double tap the Power icon to display *Power Properties*.

Check Battery Status:

The battery menu item will show the status of the main and backup batteries. There are 3 kinds of status indicators — “Good”, “Low” and “Very Low”. Bold characters indicate the actual status - e.g. battery icons in the illustration at right mean both the main and backup batteries are “GOOD”.

It is necessary to charge the battery when “Low” or “Very Low” are displayed in bold characters. If “Low” or “Very Low” are still displayed after charging, please contact Unitech Technical Support.



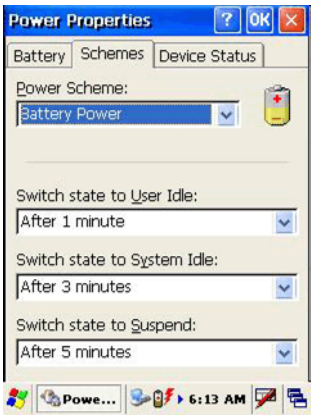
How to Save Battery Power

Automatic shut-down of the PA966

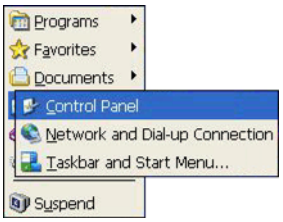
The PA966 will enter Idle Mode when there is no task, or all tasks are waiting for input. In default setting, the PA966 will automatically go to sleep if it remains idle for longer than 3 minutes and when there is no external charging power applied. Pressing the power button will return the PA966 to the same point at the time of automatic snooze.

In Power Properties, select “Power Off”. Customize automatic shut off time by tapping the arrow to select from a list of time periods. The available time periods are 1, 2, 3, 4, and 5 minutes.

This function can also be activated when the PA966 is plugged into the power adapter or placed in its cradle by tapping the check box and then tapping the arrow to select from a list of time periods. The available time periods are 1, 2, 5,10, 15 and 30 minutes.



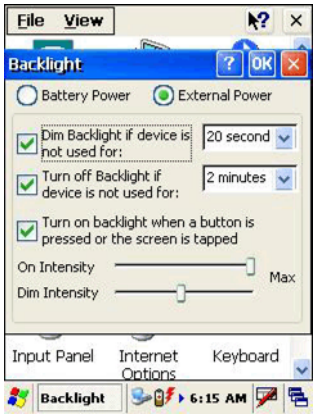
Backlight Setting



Because the power consumption of the LCD backlight is high, turn off the backlight function if it is not necessary. If a backlight is required, select the “automatically turn off the back-light” function.

To change backlight settings, select *Settings* / *Control Panel* from the Start menu, and then double tap the *Display* icon.

Tap the “Backlight” menu item to display the following three selections:



Automatically turn off the backlight when using battery power:

Tap the check box to toggle this function. Available idle times are: 15 and 30 seconds; and 1, 2, and 5 minutes.

Automatically turn off the backlight when using external power:

Tap the check box to toggle this function. Available idle times are: 15 and 30 seconds, and 1, 2, 5, 10, 15, and 30 minutes.

Automatically turn on the backlight when any key is pressed:

This function is activated by the PA966’s keypad rather than the Windows CE keyboard.

Warm Boot / Cold Boot

Warm Boot

- **Via Hardware:** To perform a warm boot while the PA966 is operating, insert the end of an unfolded paperclip into the reset hole on the back of the terminal, right below the SD Card compartment cover.
- **Via Software:** Under the Windows folder of your terminal, locate the file BootMode.exe, execute the program, and confirm the warning message.

  WARNING: Warm Boot will cause unsaved data to be lost.

Cold Boot

- To perform a coldboot, press the coldboot button inside the PCMCIA Card compartment.

WARNING: Cold Boot will cause the PA966 to return to its original factory settings.

Charging Considerations

It is important to consider the environment temperature whenever you are charging the Lithium-Ion battery pack. The process is most efficient at normal room temperature or slightly cooler, and it is essential that you charge batteries as close to this range as possible. Charging batteries outside of this range could damage the batteries and/or shorten their charging life cycle.

Storage and Safety Precautions

Although charged Lithium-Ion batteries may be left unused for several months, their capacity may be depleted due to build up of internal resistance. If this happens they will require recharging prior to use. Lithium-Ion batteries may be stored at temperatures between -4°F to 140°F (-20°C to 60°C), however they may be depleted more rapidly at the high end of this range. It is recommended to store batteries within normal room temperature ranges.

Chapter 4. Communication

Introduction

The Unitech PA966 allows users to link to a host computer via RS-232,USB, IrDA, or RF connection for data communication.

This chapter provides an overview of the communication methods of the PA966. The following subchapters cover these topics:

- ”Microsoft ActiveSync” details serial communication via RS232/ USB port.
- “RF Communication” details wireless communication between mobile PA966 and host computers.

Connecting

Serial or USB Cable

Plug the RS232 or USB end of the communication/charging cable into the appropriate PC port, and the other into the PA966’s charging/communication port (see page 3). Plug the power supply between a wall socket and the power receptacle on the RS232 or USB plug.

Docking Station

Plug the RS232 or USB end of the communication/charging cable into the appropriate PC port, and the other end into the PA966 Docking Station’s communication port. Plug the power supply between your wall socket and the power receptacle on the Docking Station.

ActiveSync

In order to exchange files between your desktop computer and the PA966, Microsoft ActiveSync must be installed on your desktop computer.

With Microsoft ActiveSync you can:

- Transfer files
- Back up and restore PA966 files
- Add programs to and remove programs from the PA966

This chapter will introduce Microsoft ActiveSync version 3.5. ActiveSync provides a user-friendly interface, and it can be downloaded free of charge from Microsoft's Web site.

Installing Microsoft ActiveSync

Before beginning installation, carefully read the following:

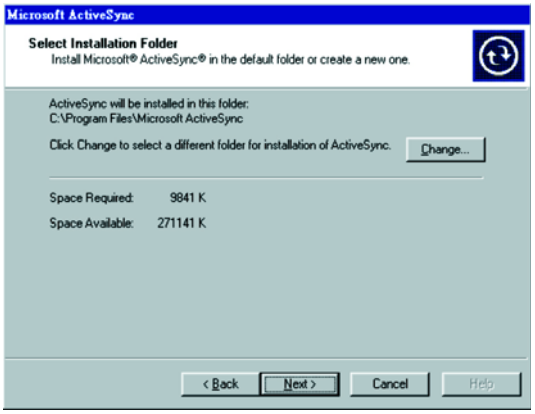
- Because you will be restarting your computer during installation, save your work and quit all programs before you begin.
- To set up your communication settings, a PA966 serial cable is required to connect the PA966 to your host computer.
- If you run the Windows NT® operating system with a service pack, you will be informed during setup that you may need to reinstall the service pack. Try connecting first, and if unsuccessful, reinstall the latest service pack.

Installation

Follow the installation procedure below to install Microsoft ActiveSync, connect your PA966 to your desktop computer, and establish a partnership for synchronization (if desired):

- Download the executable program "msasync.exe" from the Microsoft web site at: http://www.microsoft.com/mobile/pocketpc/downloads/activesync35.asp.
  Execute this program.

- Select the folder into which Microsoft ActiveSync will be installed. If you choose to download into a folder other than the displayed default folder, click the *Change* button.



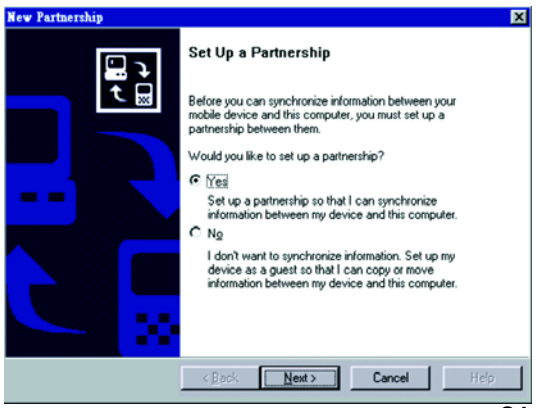
- After you've selected the appropriate folder, click *Next* to set up Microsoft ActiveSync. After you've installed Microsoft ActiveSync and restarted your computer, you'll see the following screen:

- Plug the PA966 into a RS232 or USB communication port on your desktop computer with the PA966's communication cable (see page 18).

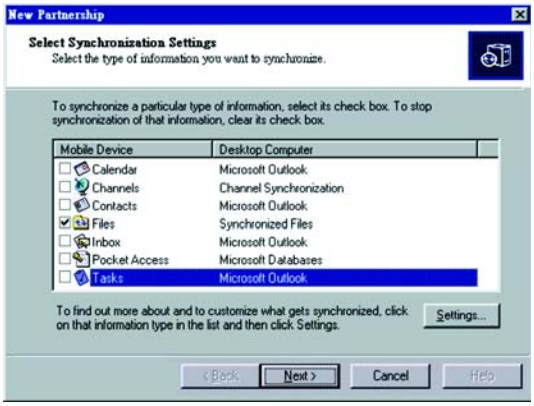
- Turn the PA966 on. Click the *Next* button.

- Microsoft ActiveSync should recognize your PA966 and configure your communication port. If a message appears indicating that it is unable to detect a connection, click the *Cancel* button and manually configure the communication settings. For more information, see "Change Communications Settings" later in this chapter.

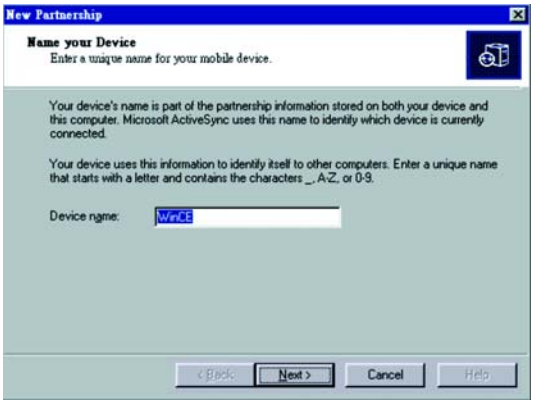
- When the PA966 is initially connected to a host PC, the following screen appears prompting you to set up a "Partnership". Setting up a Partnership is required if your PA966 is to be synchronized with other computers and/or terminals. Otherwise select No.



- Now select synchronization settings. Currently the PA966 can support “Synchronized Files”

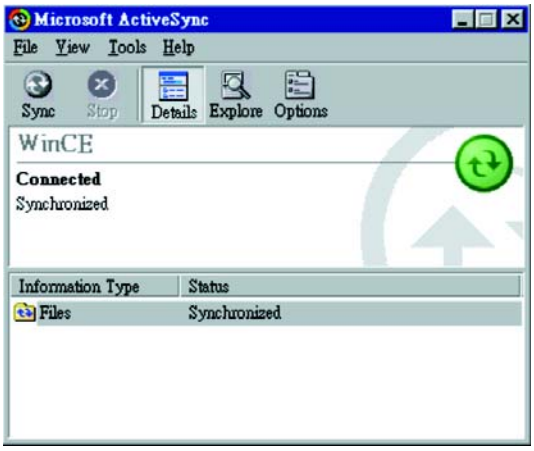


- Different PA966s cannot share the same Device Name if more than one terminal is to be connected to the same PC via a “Partnership”. The default Device Name assigned to the PA966 is “WinCE”. It is important to specify a different name for each terminal if more than one terminal is to be connected to the same PC. When ActiveSync displays the following screen, assign each terminal its own unique name.



- Click the *Next* button and follow the instructions to set up a partnership between the PA966 and your desktop computer.
  This partnership allows you to synchronize information between the two computers.

- When the configuration process is complete, you’ll see the screen to the right:

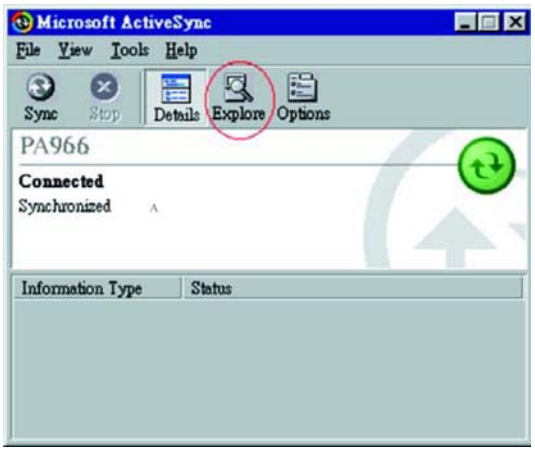


Synchronization will be initialized and will take place if you’ve chosen to synchronize periodically or upon connection.

Note: Your desktop computer can create a partnership with an almost unlimited number of PA966s. However, a single PA966 can create a partnership with up to two desktop computers.

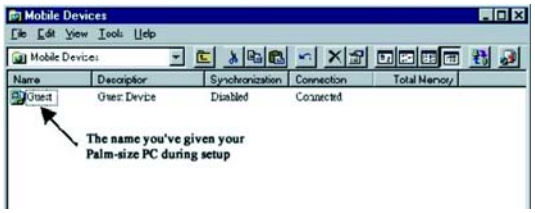
Using the Mobile Devices Window

- Start Microsoft ActiveSync by clicking the *Microsoft ActiveSync* shortcut on your desktop and then clicking the *Explore* icon.

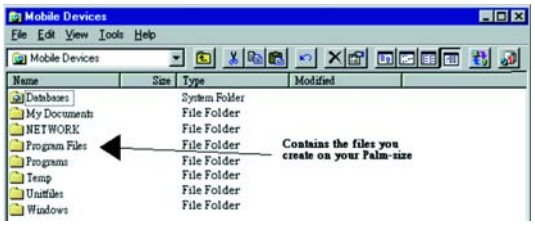


Mobile Devices Features

- Select your PA966 to use Microsoft ActiveSync features such as changing synchronization options, as described in the Synchronization section (starting page 24).



- Open the Explorer window by double-clicking your device icon in the Mobile Devices window.
  Use this window, which is the root window to the PA966, to copy and move files between the PA966 and your desktop computer, as described in the "Synchronization" section (starting page 24).

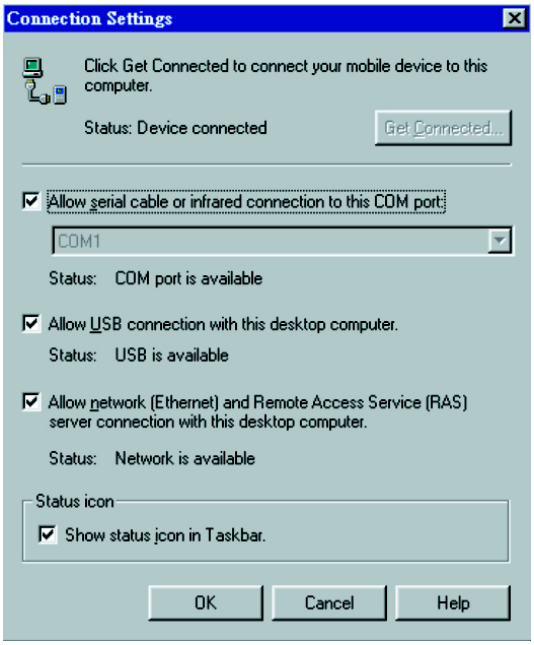


Changing Communications Settings

If Microsoft ActiveSync fails to detect the PA966 during installation, set up communications manually instead. Make sure the following conditions are met:

- Verify that the correct communications port is selected for your desktop computer and that it is free.
- Microsoft ActiveSync uses the specified communication ports to connect to the PA966. Make sure these resources are available for Microsoft ActiveSync to connect to the PA966. Other programs cannot use them while the PA966 and your desktop computer are connected.
- Set your baud rate on the PA966 - the desktop computer will match it.

To check communications settings, open the Mobile Devices folder, and click *File / Connection Settings*. The baud rate on the PA966 is set to 57600bps by default. To adjust the baud rate, tap *Start, Settings, Control Panel,* select the *Communication icon,* select the *PC Connection* tab, and then tap the *Change Connection…* button.
For more information see Microsoft ActiveSync Help.



To change the terminal's default baud rate or to use IrDA to communicate with the Host PC, follow the steps below to make modifications:

1. Tap *Start, Settings, Control Panel, Communications*
2. Tap the *PC Connection* tab
3. Tap the *Change Connection* button
4. Select the baud rate from the list box

Synchronization

Synchronizing information between your PA966 and your desktop computer will insure both computers have current information. First you'll need to install Microsoft ActiveSync on your desktop computer.

Synchronization takes place according to the options you chose during Microsoft ActiveSync setup. If you accept the default (On Connect) synchronization option in the Microsoft ActiveSync Setup Wizard, you'll be able to simply connect your PA966 to your desktop computer, and synchronization will automatically take place.

If you have not enabled *On Connect*, start Microsoft ActiveSync in either of the following ways:

- On your desktop computer, double-click the My Computer icon and then double-click the Mobile Devices folder.
- Plug the RS232 cable or USB cable between the PC and the PA966.
- Execute "Repllog.exe" from the PA966's Windows directory (if ActiveSync is setup to sync using the IrDA port on both PC and PA966).

To turn on IrDA:

1. Click on the *Control Panel* icon on your PA966
2. Click the *PC Connection* tab
3. Tap the *Change Connection* button
4. Select IrDA

Synchronization will take place according to options you've chosen. To initiate synchronization manually, click *Tools*, and *Synchronize Now*.

Synchronization may take a few minutes, as each item to be synchronized needs to be processed. A message will be displayed indicating synchronization is taking place.

After synchronization, the status message in the status bar of the Mobile Devices windows will be displayed. Status can be checked at any time. Click the *Tools* menu, and click *ActiveSync Status* to display the ActiveSync Status window.

What Gets Synchronized

The following sections provide an overview of how various types of information are synchronized. For details on synchronizing specific items, refer to Microsoft ActiveSync Help.

Files

All files created on the PA966 are stored in the *My Document / PA966 My Documents* folder (assuming the assigned Device Name is PA966). View those files by double-clicking the short-cut *PA966 My Documents* icon on your desktop computer.

If you have enabled file synchronization, your PA966 files are automatically synchronized on your desktop computer file folder WinCE_PC My Documents - unless a different name was chosen for the PA966. This folder can be found in one of following locations:

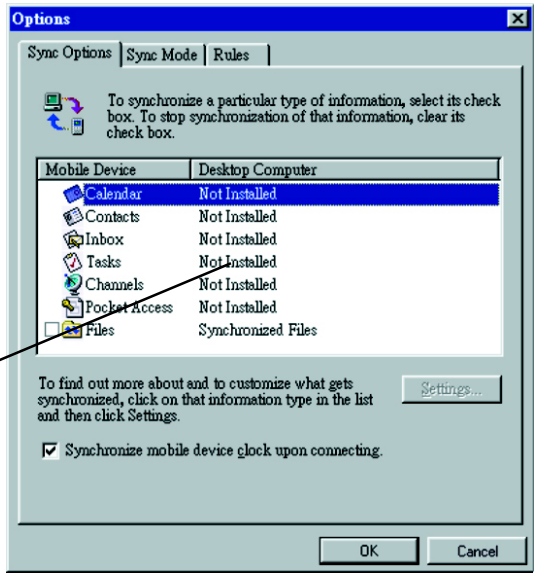
- **Windows 95 / 98 / 2000 / XP**: C:\Documents and Settings\ < user name> \ My Documents \ WindowsCE My Documents \.
- **Windows NT**: C:\ WINNT\ Profiles \ *your user-name* \ Personal \ WinCE_PC My Documents.

During synchronization, files are copied back and forth between the PA966 and the desktop computer.

Changing Synchronization Options

Synchronization options can be modified, including when you synchronize and what gets synchronized. In the Mobile Device window, click *Tools*, and then *Sync Options.*

For each type of information, the synchronization process can be hastened by limiting the amount of data to be synchronized. To do this, select a service and click the *Settings* button.



Inbox, Tasks, and Channels not supported

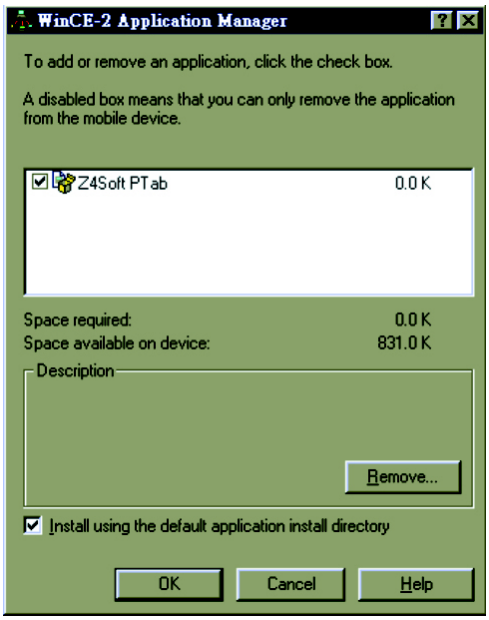
Note: The PA966 only supports File synchronization. Inbox, Channels, and Tasks are not supported. After enabling a service, you must close and reopen the ActiveSync Options dialog box before the Option button is available for that service.

Installing and Removing Software

Any program created for your PA966 can be installed as long as there is sufficient memory or storage space.

First install the software on your desktop computer and then connect the PA966 to your desktop computer. Some software programs provide their own setup instructions. Most software programs use Application Manager to install and remove software on the PA966. In the Mobile Device window, click *Tools*, and then click *Application Manager*.

- Application Manager detects the software that is available but not yet installed on the PA966.
- System software and programs added to the PA966 at the factory are stored in FlashROM. This software cannot be deleted or modified, and you'll never accidentally lose FlashROM contents.
- Software programs and data files added to your PA966 after factory installation can be stored temporarily in RAM or more permanently in Flash Memory.



InBox

Following is an overview of InBox. Step-by-Step information on how to use this program can be found in the Help function on the PA966. To view Help, tap *Start*, and then *Help*.

Sending and Receiving E-Mail with InBox

Use InBox to send and receive e-mail messages using any of these methods:

- Send and receive messages using a dial-up connection to a service provider or your corporate network.
- Send and receive messages using a wireless network card to a local area network (LAN).

Note: You can send and receive messages with Inbox, but this function cannot be synchronized with Outlook.

Sending Mail Remotely

In addition to exchanging mail messages with your desktop computer, you can send and receive mail from a remote mail server by setting up an e-mail account with a service provider.

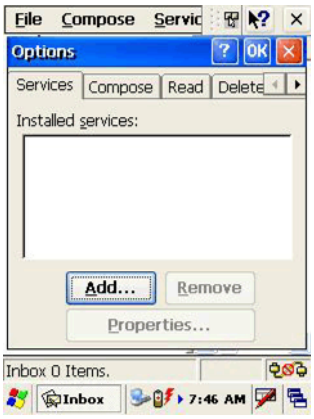
Note: If you're setting up an Internet mail account with an ISP (Internet Service Provider), the ISP must use a POP3 mail server and an SMTP mail gateway.

For dial-up connections, you'll require an internal PCMCIA type modem card or external modem for the PA966. You'll also need to set up the remote connection on the PA966 using the Connections program.

For wireless connections, you'll require an RF card for the PA966. You'll also need to set up the remote connection on the PA966 via the *Network* setting.

Setting Up Remote Mail

Multiple mail services can be utilized to obtain mail. For each mail service you will access, first set up and name each mail service. If using the same service to connect to different mailboxes, set up and name each mailbox connection.
In the InBox on the PA966, tap *Compose, Options*, the *Services tab*, and then the *Add* button.
A setup wizard will walk you through the steps.
The software for creating an Internet Mail connection to an ISP is pre-installed on the PA966.



Work Remotely

Mail received via dial-up connection appears in the InBox folder on the PA966, together with the mail you synchronize with your desktop computer. Messages received remotely are linked to your mail server rather than to your desktop computer.

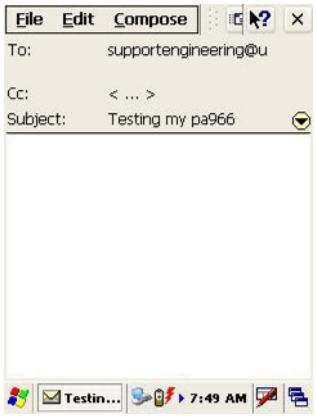
You can work online, which means that you read and respond to messages while connected to the server. Messages are sent as soon as you tap *Send*, which saves space on your device.

You can also work offline. Once you've downloaded new message headers or partial messages, you can disconnect from the server and then decide which message to download completely. The next time you connect, InBox automatically downloads the complete messages you've marked for retrieval and sends the messages you've composed.

Receiving Messages

Messages received by synchronizing with your desktop computer and through remote connections appear together in your InBox. Double-tap a message to read it.

When you connect to your Internet mail service, the InBox downloads only the first 100 lines of each new message to the InBox folder by default. No mail attachments are downloaded. When you synchronize with your desktop computer, only the first 50 lines of each new message remains on the mail server or your desktop computer.



You can mark the messages that you want to retrieve in their entirety the next time you synchronize or connect to your mail service. Select the message, tap *Service*, and then tap *Retrieve Full Copy*. The icons in the InBox messages list give you a visual indication of the message status.

Specify your downloading preferences when setting up the service or selecting your synchronization options. You can change them at any time.

- **To change InBox delivery options for mail synchronization:** in the Mobile Devices window on your desktop computer select your WinCE icon, click *Tools*, and then click *ActiveSync Options*. Select *Message* and then click *Options*. (For the *Options* button to be available, you must have previously enabled message synchronization.)
- **To change InBox delivery options for remote mail:** in InBox on your PA966, tap *Service* and then tap the service name. Then tap *Service* again and tap *Properties*.

You'll need to download a full message before you can view its attachments.

Sending Messages

To compose a new message, tap the *New Message* button on the command bar. Enter an e-mail address in the *To* field or select a name from the Address Book. All e-mail addresses entered in the e-mail fields in Contacts appear in the Address Book.

To send your message, tap **File** and **Send**. Messages are placed in your OutBox folder on the PA970 and will be delivered to their destination in one of two ways:

- They are transferred to the OutBox folder in Exchange or Outlook on your desktop computer the next time you synchronize.
- They are transmitted to your mail server the next time you connect remotely. In InBox, make sure the appropriate service is selected on the Service menu. Then tap *Connect*.

Wireless Communication

Your PA966 is equipped with built-in Bluetooth for wireless communication.

Bluetooth Setup

Select the *BTPowerON* program from *Wireless Connection on* your PA966's Startup bar.

Select *Bluetooth Module Power On* and tap OK.

Bluetooth ActiveSync

Select *BTActiveSync* from *Communication* on the Startup bar

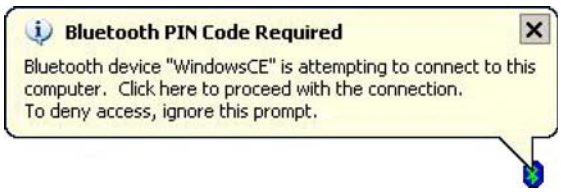
On your PC, tap the Bluetooth icon on the task bar. The screen to the right will appear. Select *More...*

Choose *Inquiry*. The inquiry process might take a few seconds. Then select the device to synchronize and tap OK

Tap the Bluetooth icon on the task bar again. Click *Sync*.

The message “Connecting to Bluetooth” will appear on your PA966.

A Bluetooth security screen will appear prompting you to enter a PIN code. This PIN code can be any series of letters and numbers, and must be the same code you enter on your PA966 when prompted.



When prompted by your PA970, enter the same PIN code that you’d entered on your PC. Once this is successfully entered, your synchronization is complete.

Appendix A: Technical Specifications

CPU / Memory

CPU	Intel 400MHz 32 bit PXA255 CPU Built-in real-time clock
Flash ROM	64MB Built-in (Flash Memory Manager included)
SDRAM	64MB

OS and Software Programming Tools

OS	Microsoft Windows CE.NET 4.2 Professional Plus
Development Language	Microsoft Embedded Visual Tool for VB and VC programming

Mechanical / Environmental

Dimensions		**PA966**	**PA967**
	Length:	7.28” (18.5cm)	7.28” (18.5cm)
	Width:	3.49” (8.76cm)	3.49” (8.76cm)
	Depth:	1.70” (4.33cm)	5.91” (15.01cm)
Weight (with battery pack)		**PA966**	**PA967**
		15.59 oz. (442g)	19.77 oz. (560g)
IP Rating	IP54		
Temperature	Operation:	23°F to 122°F (-5°C to 50°C)	
	Storage:	-4°F to 140°F (-20°C to 60°C)	
Humidity	5% to 95% RH non-condensing		
Shock	Multiple 4.0’ (1.2m) drops to concrete		

Interface Port

RS232/USB/ Charging Port	Power charging and EIA RS232C supports full duplex asynchronous communications and baud rate up to 115.2K bps
IrDA	Compliant to IrDA 1.2 (SIR) Baud rate up to 115.2K bps
PCMCIA and CF	PCMCIA Type II slot CF Type I and Type II slot accepts memory, modem, and RF cards

Input / Output

Input Devices	Touch screen, stylus, keypad, full alphanumeric software keyboard, mag stripe reader, and 1D or 2D bar code/image scanner
Keypad	36 physical keys with backlight including cursor key, numeric/alpha/ function keypad,TAB, ESC, FUNC, brightness and contrast controls
Audio Output	Piezoelectric buzzer with software controlled volume
Display	240 x 320 pixels portrait type, 256K Color LCD with touch screen and Electroluminescent backlight Contrast adjustable by software hotkey
LED Indicator	Dual colors (green/red) for barcode good read indication

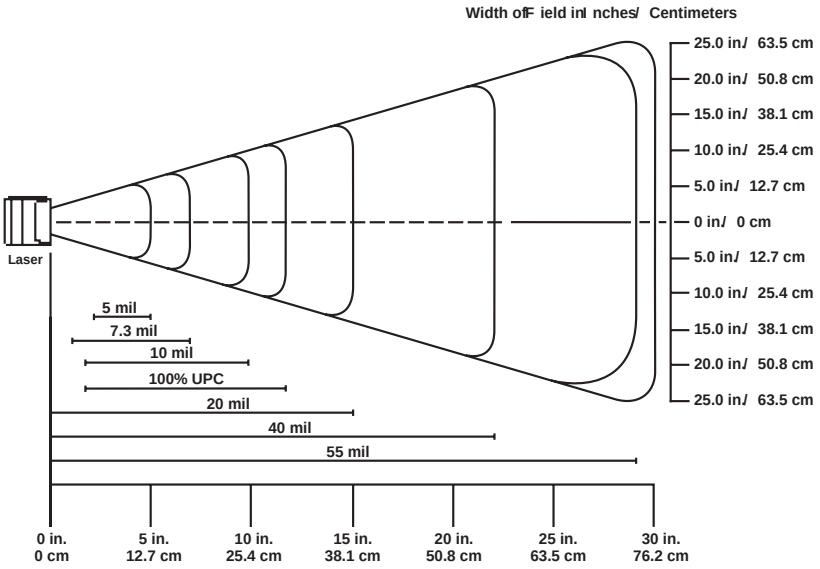
Power

Power Options	Lithium-Ion @7.4V, 1800mAH Main Battery Pack (Battery pack can be recharged 500 cycles or more) External AC/DC adapter @12VDC/2A with regulator
Power Consumption	Standby mode: 100mA Suspend mode: 5mA
Battery Charge	3 hours with external AC/DC adapter 3 hours with docking station
Backup Battery	1 rechargeable1.2V, 600mAH Ni-MH battery cell for data backup
Power Management	Power consumption indicated on status bar

1D Scan Engine

Light Source	Visible Laser Dicode(VLD) 650nm
Scan Rate	39±Scans/Second
Scan Angle	±53° from vertical
Minimum Print Contrast	25% absolute dark/light reflectance at 650nm
Power Consumption	65mA typical @ 5V
Depth of Field	See next page

1D Laser Depth of Field



Typical Depth of Field in Inches/Centimeters

*Minimum distance determined by symbol length and scan angle

Note: Typical performance at 68°F (20° C) on high-quality symbols

Decode Zone

	Near	Far
5 mil	2.0 inches (5.1cm)	5.2 inches (13.2cm)
7.5 mil	1.7 inches (4.3cm)	8.0 inches (20.3cm)
10 mil	1.8 inches (4.6cm)	10 inches (25.4cm)
100% UPC	1.9 inches (4.8cm)	13 inches (33cm)
20 mil	*	20 inches (50.8cm)
40 mil	*	25 inches (63.5cm)
55 mil	*	30 inches (76.2cm)
* Dependant on symbol width		

1D Scanner Symbologies

Codabar	Code 93	Interleaved 2 of 5	Telpen
Code 11	Code 128	Label Code	UPC-A, E
Code 32	Delta Code	MSI/Plessy	
Code 39	EAN-8, 13	Standard 2 of 5	
Code 39 Full ASCII	EAN128	Toshiba	

2D Scan Engine

Light Sources	Red Aiming LEDs @ 626nm ± 30nm Green Aiming LEDs @ 526nm ± 30nm Red Illumination LEDs @ 626nm ± 30nm
Scan Angle	±40° from vertical
Focal Point	7” (17.8cm)
Ambient Light	535 to 100,000 lux (full sunllight)

2D Scanner Symbologies

Linear Symbologies	Codabar	Code 128	RSS
	Codablock F	EAN-8, 13	UPC-A, E
	Code 39	EAN128	
	Code 93	Interleaved 2 of 5	
2D Symbologies	Aztec	EAN	QR Code
	Aztec Mesas	MaxiCode	UCC Composite
	Code 49	Micro PDF417	
	Data Matrix	PDF417	
Postal Symbologies	British Post	Japanese Post	Planet Code
	Canadian Post	KIX Post	Postnet

Pin Assignment for Charge / Communication Port

Pin	Assignment	Description
1	DCD	Data Carrier Detect
2	RXD	Receive Data
3	TXD	Send Data
4	DTR	Data Transmit Ready
5	SG	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator
10	USB 5VDC	USB 5VDC
11	12VDC	12VDC Input
12	NC	
13	NC	
14	GDN	Ground
15	UDC	USB Differential Data Signal High Side
16	/UDC	USB Differential Data Signal Low Side

Docking Station

Interface 1 EIA RS232C IDC type connector via PC/computer, 1 USB port

Power Input 16 pin connector for charging and communication with host computer
AC/DC adapter @ 12 VDC/2A with regulator
Quick charging typically takes 3 hours

Appendix B: Troubleshooting Guide

Problem	Solution
Terminal does not power on	Battery needs recharging or replacement Insure that the battery is installed correctly
Terminal turns itself off	Adjust “Power Properties” Battery needs recharging
Battery life is short	Adjust “Power Properties” - especially if peripherals are used Adjust backlight of LCD or Keypad Replace battery pack if old (battery can be recharged approximately 500 cycles)
“Low Backup Battery” message	Charge terminal for 16 hours
Screen is blank	Make sure the terminal is powered on Adjust screen brightness
Terminal either does not respond, or responds inaccurately to touch screen input.	Calibrate touch screen Perform a warm boot - **WARNING** - **Unsaved data will be lost** Perform a cold boot - **WARNING** - **Terminal will be reset to factory default settings and data will be lost**
Cannot read bar code	Make sure scanning application is loaded and operational Clean scanner window Run “Scanner Setting” program to modify barcode read setting Bar code might be distorted and should be replaced Battery needs recharging or replacement
Terminal will not shut off	If terminal is processing data, attach charging cable to insure the battery isn’t depleted If terminal is connected to AC power, disconnect Perform a warm boot - **WARNING** - **Unsaved data will be lost** Perform a cold boot - **WARNING** - **Terminal will be reset to factory default settings and data will be lost**
Terminal cannot communicate with host PC	Check settings on terminal (see page 27) Check settings on PC (see page 25) Make sure cable is tightly connected Try another cable Check to see if it works on another PC

FCC Statement

This is a FCC Part 15 Class B product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Canadian Compliance Statement

This Class B Digital apparatus meets all requirements of the Canadian Interferance-Causing Equipment Regulations.
Cet appareil numerique de la classe B respecte les exigences du Reglement sur le material broilleur du Canada.
The device is certified to the requirements of RSS-139-1 for 2.4 GHz spread spectrum devices.

European Conformity Statement

Declaration of Conformity with Regard to the R&TTE 1999/5/EC and EMC 89/336/EEC directives.

Laser Information

The Unitech PA966 is certified in the U.S. to conform to the requirements of DHHS/CDRH 21CFR Subchapter J and to the requirements of IEC 825-1. Class II and Class 2 products are not considered to be hazardous. The PA966 contains internally a Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits as set forth in the above regulations. The scanner is designed so that there is no human access to harmful laser light during normal operation, user maintenance or during prescribed service operations.

CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light. Use of optical instruments with the scanner will increase eye hazard. Optical instruments include binolulars, microscopes, and magnifying glasses. This does not include eye glasses worn by the user.

The laser safety warning label required by the DHHS/IEC for the PA966 series' optional laser scanner module is located on the memory compartment cover, on the back of the unit.

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